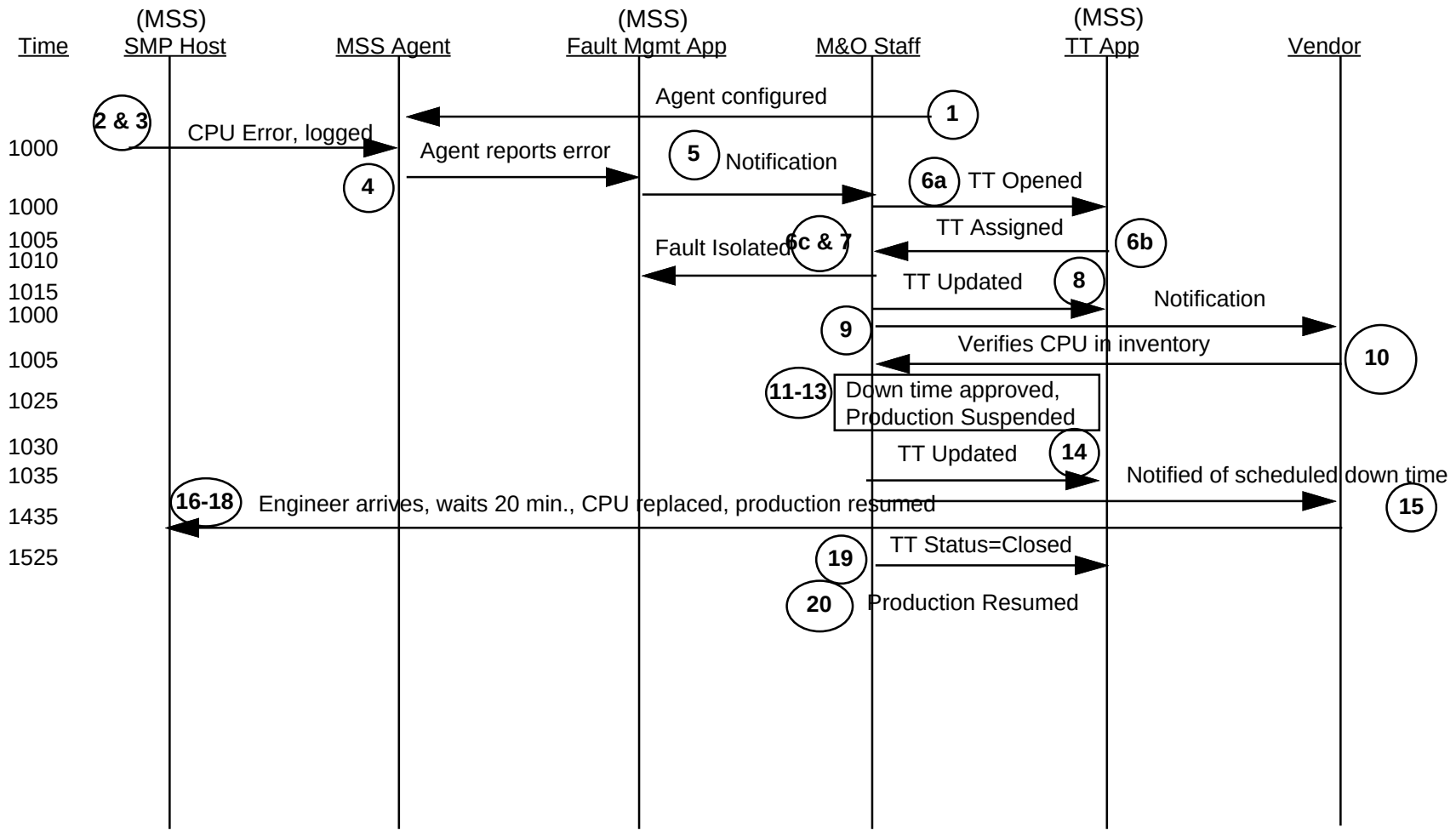
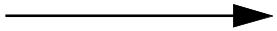
Scenario 1
Intermittent CPU Failure - Event Trace



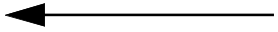
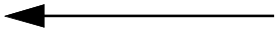
Scenario 1 - “Intermittent CPU Failure”

(Subsytems Involved: MSS, PLS, DPS)

Assumption: There is a maintenance contract established with the vendor of the SMP host in question (the primary/critical production system) to respond for corrective maintenance in no more than four hours of a call being placed.

System	Data Exchanged	Human Actions
1) The Management Agent on a production CPU has been configured to detect various categories of faults, including hardware errors (CPU, Memory, peripherals), by monitoring the console device and system log files **2) One of the CPUs in an SMP (Symmetric Multiprocessing) host (the primary/critical production system) has a hardware error** **3) The error is logged to the console and the system log by the operating system** **4) The Management Agent detects the error and sends an alert to the Fault Management Application** **5) The Fault Management Application provides a notification to the Resource Manager (RM) via an audible alert and by changing the color of the icon corresponding to the host. Further, an error message is logged and displayed in the event**	**Visual, audible Notifications** 	

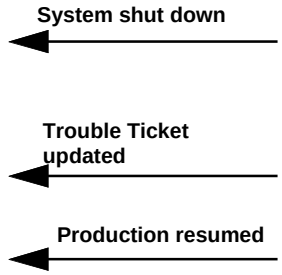
Scenario 1 - “Intermittent CPU Failure” (cont.)

System	Data Exchanged	Human Actions
browser window with the details of the error	**Browses through event browser**  **Trouble Ticket updated** 	**6a) The RM opens a Trouble Ticket, logs the system Id, time of occurrence (for RMA (MDT, MTTR, MTBF) purposes)** **6b) The RM assigns it to the Hardware Maintenance Technician (HMT)** **6c) The RM notices the event, and is able to isolate the nature of the fault by browsing through the event browser window** **7) The RM is also able to determine, by browsing through the logfile that there have been no other related hardware errors logged** **8) The RM updates the TT with the time, his/her initials and findings, and notices that the HMT has been assigned the TT** **9) The HMT calls the vendor, describes the nature of the fault, and logs a service call** **10) The vendor verifies that a spare CPU board for the SMP host is in the inventory** **11) The Operations Supervisor is apprised of the situation by the RM**

Scenario 1 - “Intermittent CPU Failure” (cont.)

System	Data Exchanged	Human Actions
	All new jobs suspended ←	12) Since the host supports Production, the Production Planner and Monitor (PPM) are informed of the situation, who then, with the RM approve one hour down time for the CPU swap 13) The PPM suspend all new production jobs, and determine the host can not be brought down now since a rerun would take 12 hours, and that the three jobs currently running would likely complete in four hours, based on the fact that one CPU is not available ASSUMPTION: It is determined that recovery of the production backlog is possible even with the delay; therefore the jobs are not rescheduled 14) The HMT updates the Trouble Ticket with the scheduled down time (i.e., to indicate the “wait” time so as to allow MDT to be accurately computed) 15) The vendor calls in, and is informed of the schedule to shutdown 16) The vendor arrives at the appointed time with the replacement CPU board 17) The production jobs have still not completed.
	Trouble Ticket updated ←	

Scenario 1 - “Intermittent CPU Failure” (cont.)

System	Data Exchanged	Human Actions
		They take 20 minutes more than expected. Everyone waits till the jobs run through to completion 18) The system is shut down, the CPU board replaced, diagnostics run, and the system rebooted within an hour from the originally scheduled time. Total host down time is 30 minutes 19) The HMT updates the Trouble Ticket to enter information for down time, and changes the status of the Trouble Ticket to “Closed” 20) The Production Monitor then resumes the production tasks held in the production queue for this host 21) Based on the information in the Trouble Ticket, the accurate calculation of MDT of the host, the MTBF and the MTTR the CPU board, by the Performance Management Application facilitated

NOTE: This scenario (and the following one) are scenarios that were proposed as desirably complex ones to be dealt with. As such, the titles shown here are the ones originally proposed, and have been retained for easy recognition. The title for this particular scenario may be misleading since the fault that we are dealing with is a total CPU failure, not “Intermittent” as the title suggests.